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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| EXAMINER |
|---|
| GAY, JENNIFER HAWKINS |

| ART UNIT | PAPER NUMBER |
|---|---|
| 3672 | |

DATE MAILED: 09/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

SW

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/030,413 | BAKKE, STIG | |
| | Examiner | Art Unit | |
| | Jennifer H Gay | 3672 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *07 May 2002* .

2a)☐ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5,7-10 and 14* is/are rejected.

7)☒ Claim(s) *6,11-13* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *07 May 2002* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *4* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

## DETAILED ACTION

### *Drawings*

1. The drawings are objected to because Figure 1 does not include any reference numbers; the examiner considers reference number essential to the understanding of the claimed invention. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the bore through the valve body and upper valve body part as recited in claim 13 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### *Specification*

3. The substitute specification filed 7 May 2002 has not been entered because it does not conform to 37 CFR 1.125(b) and (c) because: a substitute specification must include a clean and marked-up copy of the specification in its entirety, not just those portions that applicant wishes to amendment. The examiner notes, however, that the changes indicated in the substitute specification would be expectable if filled correctly.

### *Claim Objections*

4. Claim 1 is objected to because of the following informalities:

- Line 3 recites the limitation "the bent sub". There is insufficient antecedent basis for this limitation in the claim. It is the opinion of the examiner that "the

bent sub" is referring to "drill string sub" in line 2 of the claim and is treating it as such for the purpose of examination.

- In line 5, "co-operating" should be changed to --cooperating--.
- In lines 6 and 7, a comma should be added after "for" and after "displacement".

Appropriate correction is required.

5. Claims 3 and 4, which depends from claim 3, are objected to because they appear to contradict each other; claim 3 states that the first set of splines is formed on an upper part of an intermediate housing and claim 4 states that the first set of splines is formed on the upper end of the lower housing. It is unclear to the examiner if the first set of splines is on both portions of the housing or just one of the portions. Clarification and/correction are required.

## *Claim Rejections - 35 USC § 103*

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 1-5, 7-10, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Falgout, Sr. (US 5,775,444) in view of Coram (US 5,450,914).

*Regarding claims 1 and 14:* Falgout, Sr. discloses a tool for changing the direction of drilling equipment while drilling a wellbore; the equipment includes a drill string, drill string sub, and a drill bit. The tool includes the following features:

- A housing made of multiple sections (1 and 2).
- A passage for fluid (see Figure 1) located through the tool.
- A hydraulic piston (3 and 7) with a set of cooperating guides (1c, 5b, 12a) that cause a portion of the housing (2) to rotate with respect to the other portion when the piston is displaced.

- The pressure for moving the piston is obtained by choking fluid through ports (7a) above the piston.
- The two portions of the housing are connected by a one direction rotatable bearing (10).

Falgout, Sr. discloses all of the limitations of the above claims except for the drilling equipment including a drilling motor.

Coram teaches a steering tool similar to that of Falgout, Sr. Coram further teaches that the tool is used in conjunction with a drill bit and downhole motor (see col. 2, lines 35-40). *The examiner notes that Falgout, Sr. discloses that the tool described therein is a motor, however, the disclosed tool is similar to that taught by Coram which teaches a motor separate from the steering tool.*

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have modified Falgout, Sr. to include the motor taught by Coram in order to have been able to rotate the drill bit and change the direction of the drilling equipment separately. One would have been motivated to make such a combination because a means for rotating the drill bit (see col. 1, liens 23-27) would have been obtained, as taught by Coram.

*Regarding claims 2-4:* As seen in Figures 1 and 7, the first set of guides are formed in the wall of the passage and the second set is formed on the outer wall of the piston. The guides include a first set of splines (see Figure 7) formed on the upper end of the first portion (1) of the housing and a second set of splines formed circumferentially around and along the piston.

*Regarding claim 5:* Falgout, Sr. discloses all of the limitations of the above claims except for the tool including a valve located in the upper end of a bore through the piston.

As seen in Figure 2A and 11, Coram teaches a valve (26) located in a bore through a piston (28) (*the examiner notes that Coram defines element "26" as being the piston, however, as shown in Figures 2A and 11, element "26" functions to choke the flow of fluid through a bore through element "28" which functions as a piston*). The valve includes a valve seat (not specifically labeled) on the upper end of the bore and functions to choke the flow of fluid through the bore.

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have modified Falgout, Sr. to include the valve taught by Coram in order

to have been able to control the pressure within the tool and then supply the motor and drill bit with fluid when the tool is in the desired orientation (see col. 5, lines 30-35). One would have been motivated to make such a combination because effective steering tool would have been obtained, as inferred by Coram.

*Regarding claim 7:* The piston of Falgout, Sr. is displaced by fluid pressure created when fluid is choked through a series of ports (7a) and is returned to its initial position by a piston spring (8).

*Regarding claim 8:* The piston of Falgout, Sr. is sleeve shaped and movable between an upper shoulder in the passage of the tool and a lower shoulder formed in the passage.

*Regarding claim 9:* The piston and the lower portion of the housing are displaceably and rotatably connected.

*Regarding claim 10:* Falgout, Sr. discloses all of the limitations of the above claims except for the displaceable and rotatable connection between the piston and the lower portion of the housing being a ratchet mechanism.

As seen in Figures 7 and 8, Coram teaches that the piston (28) and the housing (10) are displaceably and rotatably connected by a ratchet mechanism (36 and 38).

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have modified Falgout, Sr. so that the piston and the lower portion of the housing were connected by a ratchet mechanism as taught by Coram in order to have allowed rotation of the housing in one direction while preventing rotation in the opposite direction. One would have been motivated to make such a combination because a means for preventing the tool from moving out of the desired orientation would have been obtained, as inferred by Coram.

## ***Allowable Subject Matter***

8. Claims 6 and 11-13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

## *Conclusion*

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The remaining references made of record disclose various directional drilling tools.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer H Gay whose telephone number is (703) 308-2881. The examiner can normally be reached on Monday-Thursday, 6:30-4:00 and Friday, 6:30-1:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bagnell can be reached on (703) 308-2151. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1113.

David Bagnell
Supervisory Patent Examiner
Art Unit 3672

JHG
September 3, 2003